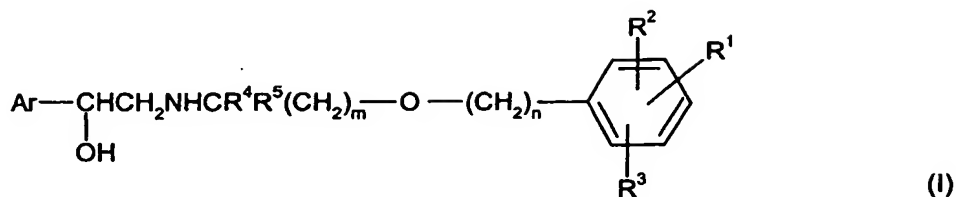


CLAIMS

1. A compound of formula (I):



or a salt, solvate, or physiologically functional derivative thereof, wherein:

10 m is an integer of from 2 to 8; and

n is an integer of from 3 to 11;

with the proviso that m + n is 5 to 19;

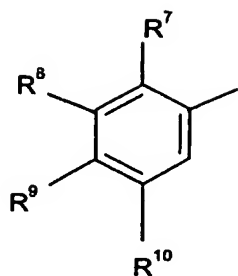
15 R¹ is SR⁶, SOR⁶, or SO₂R⁶,

wherein R⁶ is a C₃₋₇cycloalkyl or C₃₋₇cycloalkenyl group;

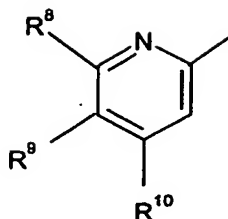
R² and R³ are independently selected from hydrogen, C₁₋₆alkyl, C₁₋₆alkoxy, halo, phenyl, and C₁₋₆haloalkyl;

20 R⁴ and R⁵ are independently selected from hydrogen and C₁₋₄alkyl with the proviso that the total number of carbon atoms in R⁴ and R⁵ is not more than 4;

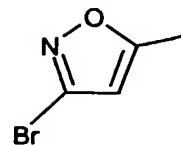
Ar is a group selected from



(a)

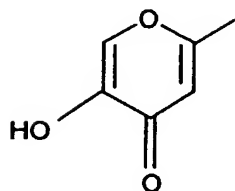


(b)



(c)

and



(d)

wherein R^8 represents hydrogen, halogen, $-(CH_2)_qOR^{11}$, $-NR^{11}C(O)R^{12}$, $-NR^{11}SO_2R^{12}$,
 5 $-SO_2NR^{11}R^{12}$, $-NR^{11}R^{12}$, $-OC(O)R^{13}$ or $OC(O)NR^{11}R^{12}$,
 and R^7 represents hydrogen, halogen, or C_{1-4} alkyl;

or R^8 represents $-NHR^{14}$ and R^7 and $-NHR^{14}$ together form a 5- or 6- membered
 heterocyclic ring;

10

R^9 represents hydrogen, halogen, $-OR^{11}$ or $-NR^{11}R^{12}$;

R^{10} represents hydrogen, halogen, halo C_{1-4} alkyl, $-OR^{11}$, $-NR^{11}R^{12}$, $-OC(O)R^{13}$ or
 $OC(O)NR^{11}R^{12}$;

15

R^{11} and R^{12} each independently represents hydrogen or C_{1-4} alkyl, or in the groups -
 $NR^{11}R^{12}$, $-SO_2NR^{11}R^{12}$ and $-OC(O)NR^{11}R^{12}$, R^{11} and R^{12} independently represent
 hydrogen or C_{1-4} alkyl or together with the nitrogen atom to which they are attached form a
 5-, 6- or 7- membered nitrogen-containing ring,

R^{13} represents an aryl (eg phenyl or naphthyl) group which may be unsubstituted or substituted by one or more substituents selected from halogen, C_{1-4} alkyl, hydroxy, C_{1-4} alkoxy or halo C_{1-4} alkyl; and

5

q is zero or an integer from 1 to 4.

2. A compound of formula (I) or a salt, solvate of physiologically functional derivative thereof, wherein formula (I) is as defined in claim, except that R^8 does not represent hydrogen.

10

3. A compound according to claim 1 or claim 2 wherein R^1 represents $-SO_2R^6$.

15

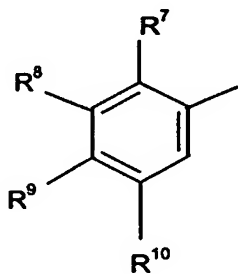
4. A compound according to any of claims 1 to 3 wherein R^6 represents a C_{3-7} cycloalkyl group.

5. A compound according to any of claims 1 to 4 wherein R^2 and R^3 each represent hydrogen.

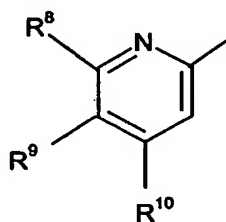
20

6. A compound according to any of claims 1 to 5 wherein R^4 and R^5 are independently selected from hydrogen and methyl.

7. A compound according to any of claims 1 to 6 wherein Ar is selected from a group (a) or (b):



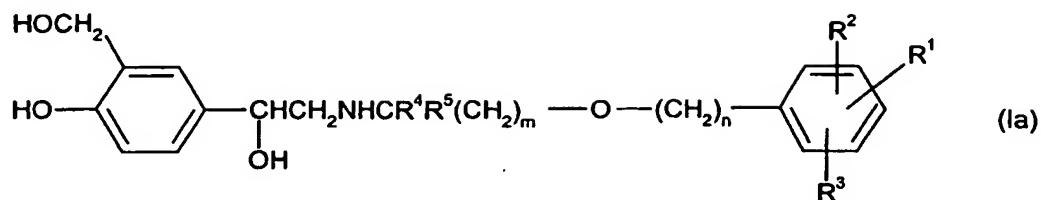
(a)



(b)

25

8. A compound of formula (Ia):



5 or a salt, solvate, or physiologically functional derivative thereof, wherein:

m is an integer of from 2 to 8; and

n is an integer of from 3 to 11;

with the proviso that m + n is 5 to 19;

10

R¹ is SR⁶, SOR⁶, or SO₂R⁶,

wherein R⁶ is a C₃₋₇cycloalkyl or C₃₋₇cycloalkenyl group;

R² and R³ are independently selected from hydrogen, C₁₋₆alkyl, C₁₋₆alkoxy, halo, phenyl,
and C₁₋₆haloalkyl; and

15

R⁴ and R⁵ are independently selected from hydrogen and C₁₋₄alkyl with the proviso that the total number of carbon atoms in R⁴ and R⁵ is not more than 4.

20 9. A compound according to any of claims 1 to 8 wherein m is 5 or 6 and n is 3 or 4.

10. A compound of formula (I) or (Ia) selected from:

4-((1*R*)-2-[(6-{4-[3-(Cyclopentylsulfinyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol;

25 4-((1*R*)-2-[(6-{4-[3-(Cyclopentylsulfinyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol (Isomer 1);

4-((1*R*)-2-[(6-{4-[3-(Cyclopentylsulfinyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol (Isomer 2);

30 4-((1*R*)-2-[(6-{4-[3-(Cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol;

4-((1*R*)-2-[(6-{4-[4-(Cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol;

4-((1*R*)-2-[[6-((4-[3-(Cyclohexylsulfonyl)phenyl]butyl)oxy)hexyl]amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol;

4-((1*R*)-2-[[6-((4-[3-(3-Cyclopenten-1-ylsulfonyl)phenyl]butyl)oxy)hexyl]amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol;

5 4-((1*R*)-2-[[6-((5-[3-(Cyclopentylsulfonyl)phenyl]pentyl)oxy)hexyl]amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol;

4-((1*R*)-2-[[7-((3-[3-(Cyclopentylsulfonyl)phenyl]propyl)oxy)heptyl]amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol;

4-((1*R*)-2-[[6-((4-[3-(Cyclopentylsulfonyl)-5-methylphenyl]butyl)oxy)hexyl]amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol;

10 *N*-[5-((1*R*)-2-[[6-((4-[3-(Cyclopentylsulfonyl)phenyl]butyl)oxy)hexyl]amino]-1-hydroxyethyl)-2-hydroxyphenyl]methanesulfonamide;

4-((1*R*)-2-[[6-((4-[3-(Cyclopentylsulfonyl)phenyl]butyl)oxy)hexyl]amino]-1-hydroxyethyl)-2-fluorophenol;

15 6-{2-[(6-{4-[3-(Cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl}-2-(hydroxymethyl)pyridin-3-ol;

5-((1*R*)-2-[(6-{4-[3-(Cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl)-8-hydroxy-3,4-dihydroquinolin-2(1*H*)-one;

5-((1*R*)-2-[(6-{4-[3-(Cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl)-2-hydroxyphenylformamide;

20 and salts, solvates, and physiologically functional derivatives thereof.

11. A compound of formula (I) or (Ia) which is:

4-((1*R*)-2-[(6-{4-[3-(Cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol;

25 or a salt, solvate, or physiologically functional derivative thereof.

12. A compound according to any of claims 1 to 11 in the form of a salt formed with an arylsulphonic acid.

13. A compound according to any of claim 8, claim 9 or claim 12 which is selected from:

4-((1*R*)-2-[(6-{4-[3-(cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol 4-methylbenzenesulfonate;

4-((1*R*)-2-[(6-{4-[3-(cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino]-1-hydroxyethyl)-2-(hydroxymethyl)phenol 4-bromobenzene sulfonate;

4-((1*R*)-2-((6-{4-[3-(cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino)-1-hydroxyethyl)-2-(hydroxymethyl)phenol 4-chlorobenzene sulfonate

4-((1*R*)-2-((6-{4-[3-(cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino)-1-hydroxyethyl)-2-(hydroxymethyl)phenol 3-toluene sulfonate;

- 5 4-((1*R*)-2-((6-{4-[3-(cyclopentylsulfonyl)phenyl]butoxy}hexyl)amino)-1-hydroxyethyl)-2-(hydroxymethyl)phenol 4-biphenyl sulfonate; and
4-((1*R*)-2-((6-{4-[3-(cyclopentylsulfonyl)phenyl]butoxy}
hexyl)amino)-1-hydroxyethyl)-2-(hydroxymethyl)phenol, naphthalene-2-sulfonate.

- 10 14. A compound according to claim 13 wherein the salt is in crystalline form.

- 15 15. A method for the prophylaxis or treatment of a clinical condition in a mammal, such as a human, for which a selective β_2 -adrenoreceptor agonist is indicated, which comprises administration of a therapeutically effective amount of a compound of formula (I) or (Ia) according to any of claims 1 to 14 or a pharmaceutically acceptable salt, solvate, or physiologically functional derivative thereof.

- 20 16. A compound of formula (I) or (Ia) according to any of claims 1 to 14 or a pharmaceutically acceptable salt, solvate, or physiologically functional derivative thereof for use in medical therapy.

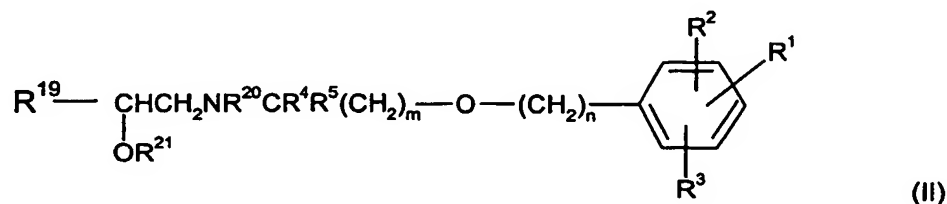
- 25 17. A pharmaceutical formulation comprising a compound of formula (I) or (Ia) according to any of claims 1 to 14 or a pharmaceutically acceptable salt, solvate, or physiologically functional derivative thereof, and a pharmaceutically acceptable carrier or excipient, and optionally one or more other therapeutic ingredients.

- 30 18. A combination comprising a compound of formula (I) or (Ia) according to any of claims 1 to 14 or a pharmaceutically acceptable salt, solvate, or physiologically functional derivative thereof, and one or more other therapeutic ingredients.

- 35 19. The use of a compound of formula (I) or (Ia) according to any of claims 1 to 14 or a pharmaceutically acceptable salt, solvate, or physiologically functional derivative thereof in the manufacture of a medicament for the prophylaxis or treatment of a clinical condition for which a selective β_2 -adrenoreceptor agonist is indicated.

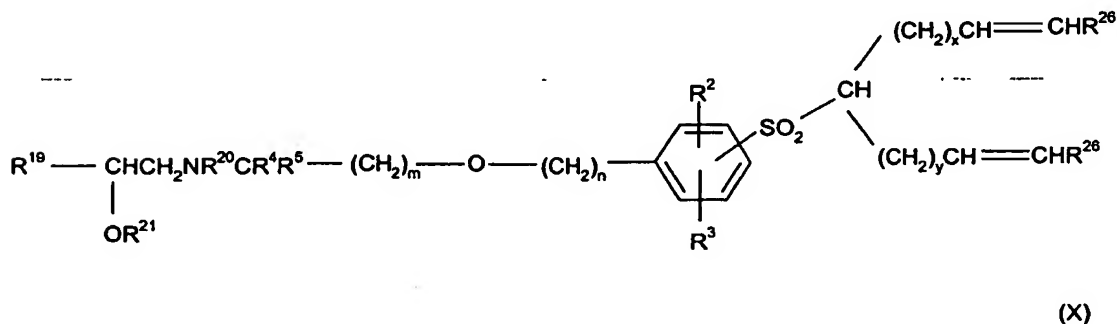
20. A process for the preparation of a compound of formula (I) or (Ia) according to any of claims 1 to 14 or a salt, solvate, or physiologically functional derivative thereof, which comprises:

- 5 (a) deprotection of a protected intermediate, for example of formula (II):



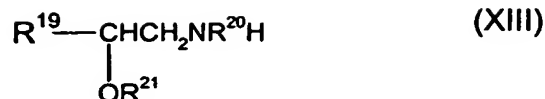
- 10 or a salt or solvate thereof, wherein R^1 , R^2 , R^3 , R^4 , R^5 , m , and n are as defined for the compound of formula (I), R^{19} represents an optionally protected form of Ar; and R^{20} and R^{21} are each independently either hydrogen or a protecting group, provided that the compound of formula (II) contains at least one protecting group;

- 15 (b) reaction of a compound of formula (X):

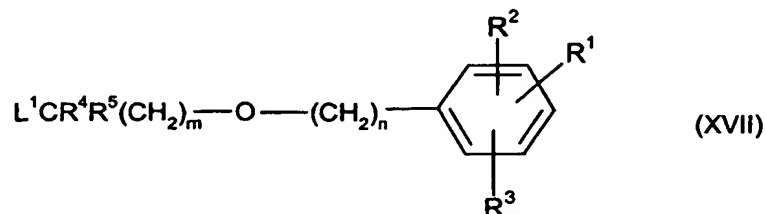


- 20 wherein R^2 , R^3 , R^4 , R^5 , R^{19} , R^{20} , R^{21} , m and n are as defined for formula (II) each R^{26} independently represents hydrogen or C_{1-4} alkyl, and x and y each represent 0, 1 or 2; to effect ring closure;

- 25 (c) alkylation of an amine of formula (XIII):

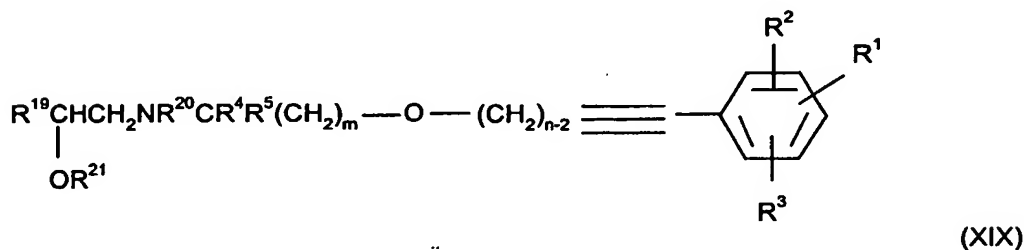


wherein R^{22} , R^{23} , R^{20} and R^{21} are each independently either hydrogen or a protecting group with a compound of formula (XVII):



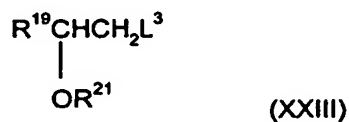
wherein R^1 , R^2 , R^3 , R^4 , R^5 , m , and n are as defined for the compound of formula (I) and L^1 is a leaving group;

(d) reduction of a compound of formula (XIX):



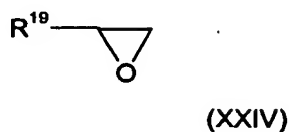
Wherein R^1 , R^2 , R^3 , R^4 , R^5 , m and n are as defined for formula (I), R^{19} represents an optionally protected form of Ar and R^{20} and R^{21} are each independently hydrogen or a protecting group as defined above.

(e) reacting a compound of formula (XXIII):



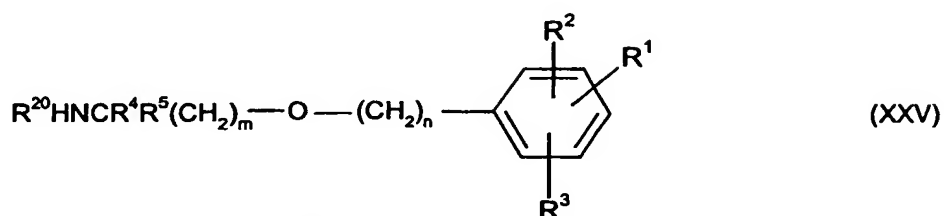
wherein R^{19} is as hereinbefore defined and L^3 is a leaving group as defined above for L^1 or L^2 ;

or a compound of formula (XXIV):



5

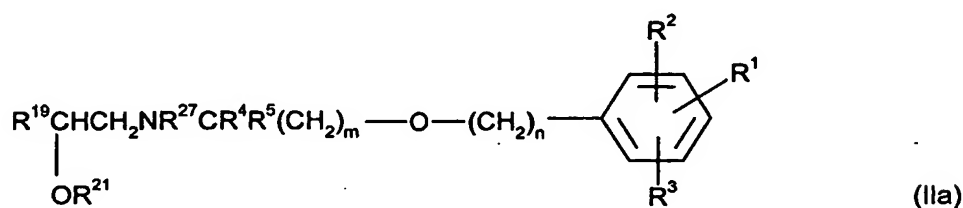
wherein R^{19} is as hereinbefore defined
with an amine of formula (XXV):



wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^{20} , m and n are as defined for formula (II); or

10

(f) removal of a chiral auxiliary from a compound of formula (IIa)



wherein $R^1 - R^5$, m and n are as defined for formula (I), R^{19} represents an optionally protected form of Ar, R^{21} represent hydrogen or a protecting group and R^{27} represents a chiral auxiliary.

15

followed by the following steps in any order:

(i) optional removal of any protecting groups;

(ii) optional separation of an enantiomer from a mixture of enantiomers;

20

(iii) optional conversion of one compound of formula (I) to a different compound of formula (I) eg. conversion of a compound wherein R^1 is SR^6 to a compound wherein R^1 is SOR^6 or SO_2R^6 , or conversion of a compound wherein R^1 is SOR^6 to a compound wherein R^1 is SO_2R^6 ;

5 (iv) optional conversion of a compound wherein R^6 represents cycloalkenyl to a compound wherein R^6 represents cycloalkyl, eg. by hydrogenation;

(v) optional conversion of the product to a corresponding salt, solvate, or physiologically functional derivative thereof.

10

21. An intermediate selected from a compound of formula (II) (III) (IV) (X) and (XIX) as hereinbefore defined.